Mapping

Article 1 : The Concept of Mapping and Adjustment of the User Mappings

In this series of two articles we shall look at the process of mapping sounds and styles in a Wersi instrument, using a Verona as the source of screenshots. This first article considers the concept of mapping in conjunction with using the process to adjust the User Mapping Presets provided by Wersi. The second article will demonstrate how to map the Sounds and Styles Buttons for particular Total Presets so sounds and styles can be changed with a single button press to the sound/style of your choice (pre-determined) rather than just what happens to be the sound/style which is first in the list in the default Mapping Presets.

Sounds will be used as the examples throughout. The same process applies to styles.

The Mapping Concept

Development

Development of methods of accessing sounds through generations of electronic organs

In the past, electronic organs had a "one button/one sound" situation. If you wanted to change the sound you just pressed a different button. As the technology developed and electronic organs began to introduce orchestral sounds, so the number of sounds available increased as did the number of buttons. Eventually it all became too much and there was not enough space on the instrument's panels for all the individual buttons needed to allow the user to have access to all the available sounds.

Different manufacturers tackled this problem slightly differently, though with a common theme. Do you remember the Yamaha MC series, with the "Wheel" top right? As you turned this Wheel, a different set of sounds would appear. Three moves were needed while playing in order to select these "extra" sounds: select the Wheel; turn the Wheel; select the Sound. So long as you knew whereabouts on the Wheel the sound you wanted was located, a bit of practice and experience was all that was needed. The more traditional sounds were still located under "normal" buttons.

Thus was born the idea of providing a large number of sounds in menu format. When digital technology invaded the organ scene and display screens became a way of providing an interface between the player and the instrument, this idea really took off. This was also fuelled by sampling techniques allowing a further increase in the number of sounds available. The race was on to see which manufacturer could provide the largest number of sounds. It became just one discriminatory factor between models, enabling instruments with a larger number of sounds to carry a price premium.

Despite the technology opening up even more opportunities to exploit the situation, many manufacturers still provided a fixed set of sounds (and still do to this day) while others used the new technology to offer additional sounds (at a cost) which could be added to the instruments later. This latter process is at the core of the Wersi philosophy of upgrading your instrument via software. A current Wersi OAS instrument could have well over one thousand sounds. How to organise these and make them available to the player is the problem and Wersi has solved that by the process of Mapping.

What exactly is Mapping?

Meaning of the term "Mapping"

Mapping is the allocation of sounds (and styles) to the physical buttons on the panels of the instrument. Wersi has set the Sound Buttons out in blocks: *Organ, Percussion, Ensemble, Brass, Traditional, Synthesizer, Pedal* are the names of the blocks on my Verona. No design for such blocking is going to be perfect. That also applies to the naming of the buttons within each block. Each button allows the player access to a set of sounds which match (or not) the button's name and this set of sounds is displayed on the screen. There is only one block for the styles: Rhythm/Accompaniment. Within that are the Styles Buttons, eg 8 Beat, Ballad etc.

Here is a screenshot of a Main screen, where Vibraphone 1 has been placed in the first layer of the Upper Manual (UM1) of a Standard Total Preset.

The Mapping area on the Main screen

Here is the Mapping Area. There are 9 boxes for the sounds, eight in yellow and the selected one in a greyish colour.

ACC, Sounds and Level tabs

There is a "Header" bar which has up to seven tabs (only five shown above).

The left-most tab is **ACC** which is used to set the Style (or ACCompaniment) Mapping.

Next is the **Sounds** tab which allows you to map up to nine Sounds for the particular Manual Layer selected (Upper Manual 1 [UM1] in the above screenshot - has a blue highlighted outline) for use in the current Total Preset only.

Then there are five **Level** tabs of which only Level 1 to Level 3 are shown above. Level 1 is the currently selected one.

The use of the word "Level" does not imply any hierarchy. It's just like floor levels in a building; merely a way of indicating blocks of content. Imagine a box containing five drawers labelled Drawer 1 to Drawer 5. Each drawer contains nine compartments which can be filled with one item each.

Level = Drawer

The nine Sounds are in the nine compartments, one each.

Levels 4 and 5 in the above screenshot contain no sound names so their tabs are invisible.

The allocation of sounds to each of the nine compartments in any Level is called Mapping. How can this Mapping be adjusted by the user?

**Two ways of loading a sound into a manual layer (Selector)**

Before answering this question, to set up the above situation you could load the Vibraphone 1 sound into the UM1 layer (Selector) by selecting the UM1 layer by touching it on the screen. Then press the Vibes Button on the right panel of the instrument. Instead you may, after selecting UM1 as before, have used Quickload and then selected Vibraphone 1 from the Sounds database list. Doing it the second way bypasses the Mapping process and places the selected Sound in the first of the nine compartments under the **Sounds** tab in the Mapping area, not in the first compartment under the Level 1 tab. That Quickload process has been covered in another article so for the purposes of investigating Mapping, all insertions of sounds or styles should be from the physical buttons.

How to access the Sound Manager screen where Mapping can be changed

Now let's try to answer the question. It's best to follow the procedure yourself on your Wersi instrument. Press the Vibes Button on the right panel and hold it down until the display changes to the **Sound Manager** screen shown below.

This bar shows which Mapping Presets are allocated to which Levels in the currently selected Sound Button. This needs more explanation - see later.

This bar shows firstly the **Preset** button which refers to the Sounds button (Main Screen) Mapping (which is available only in the Total Preset currently selected).
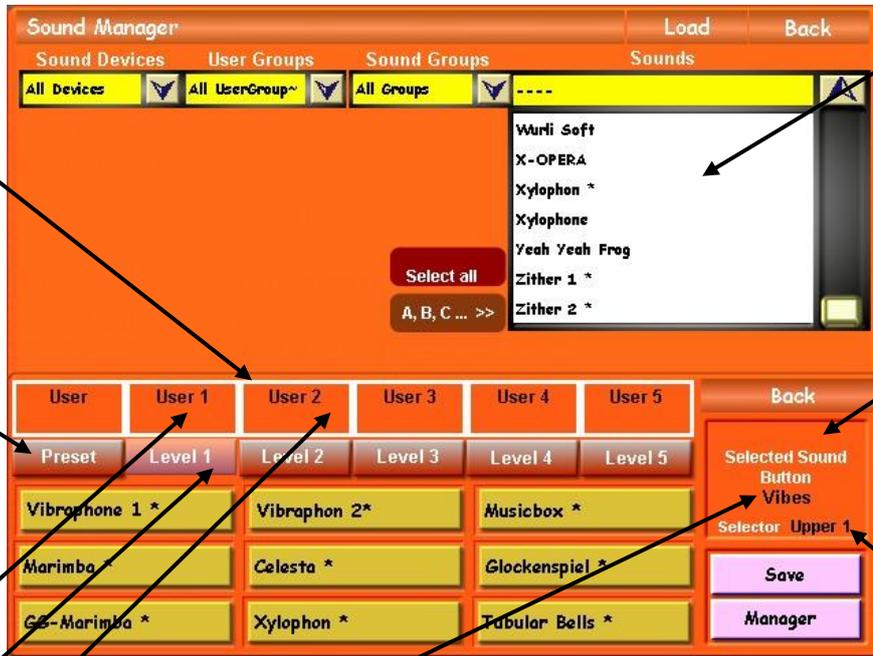
Here is the database of **Sounds**, with the three panels to the left (**Sound Devices**, **User Groups**, **Sound Groups**) providing ways of limiting the selection of sounds displayed.

This area contains three software buttons plus information about which physical sound button's Mapping is shown (Vibes in this case) and which sound layer (Selector) is currently selected (Upper 1 in this case).

The rest of this bar always shows all five Levels of mapping, with **Level 1** being the currently selected one. The sounds in the nine yellow compartments below the bar are those currently mapped to the Mapping Preset called "**User 1**" within the Sound Button "**Vibes**". Touch the **Level 2** (or the **User 2**) tab to reveal the sounds mapped to the Mapping Preset called "**User 2**" within the Sound Button "**Vibes**", and touch the **Level 3** (or the **User 3**) tab for those mapped to the "**User 3**" Preset etc. User 4 and User 5 Presets have no sounds mapped to them for this Vibes Button, as received from Wersi.

Now, if you've read the above labels to the screenshot you may well be forgiven for being totally confused. I have certainly been in this state for some time regarding Mapping. Stop laughing those of you for whom this whole thing is a doddle!

An understanding of the Wersi concept of Mapping is vital at this point, so here goes.

A way of understanding the Wersi concept of Mapping

There are five Factory Mapping Presets, called Factory 1, Factory 2 etc up to Factory 5. As far as I can tell Wersi has copied each of these Presets into five other Presets called User 1, User 2 etc up to User 5. The Factory Presets cannot be changed by the user but the User Presets can be changed. There appear to be 50 available slots for User Mapping Presets, the first five being occupied by User 1 to User 5. When mapping the physical buttons prior to shipping the instrument, all sound buttons are saved with User 1 to User 5 Mapping Presets.

It makes sense for User 1 Preset to be used for Level 1 sounds, User 2 Preset for Level 2 sounds etc. That is the way it's been done and that is what the above screenshot shows. There are 38 Sound Buttons on my Verona so User 1 Mapping Preset can contain up to 38 x 9 = 342 sounds. So can User 2 Mapping Preset, so can User 3 Mapping Preset etc. I'm sure you've spotted that the multiplication is by nine because of the nine compartments in each Level.

The 342 sounds in each Mapping Preset are arranged in 38 columns, each column consisting of 9 rows - it's a table! The 38 **columns** have labels matching the Sound Button names, the 9 **rows** have a numbering from 1 to 9 which matches the nine yellow compartments moving horizontally from compartment 1 top left to 3 top right, then 4 - 6 left to right in the middle three and finally 7 - 9 along the bottom row. For example, User 1 Mapping Preset may contain in part:

Position	Grand Piano	Vibes	E-Piano 1	E-Piano 2	Acoustic Guitar
1	Grand Piano *	Vibraphone 1 *	Rhodes 1 *	E-Piano 1 *	Natural Guitar *
2	Bright Grand Piano*	Vibraphon 2 *	Rhodes 2 *	E-Piano 2 *	Western Guitar *
3	Piano Octave *	Musicbox *	Rhodes 3 *	E-Piano 3 *	12 String *
4	Piano + Strings *	Marimba *	Fantasy Rhodes *	E-Piano Pad *	Naturgitarre 2 *
5	Piano Dreams *	Celesta *	Electric Grand 1 *	E-Piano Bells *	Steel Guitar *
6	Piano + Vocals *	Glockenspiel *	Electric Grand 2 *	Koto *	12 String Steel *
7	HonkyTonk *	GG-Marimba *	Steel Drums *	Kalimba *	Jazz Guitar *
8	Harpsichord *	Xylophon *	Caribic *	Clavinet Stereo*	CD-JazzGuit *
9	Flügel Klassik	Tubular Bells *	Tinkle Bell *	Clavinet *	Banjo *

This is how my Verona has its original User 1 Mapping Preset arranged for the above Sound Buttons.

The outcome of all this is that you, the user, can:
- Put any sound you like into any of the compartments of any Mapping Preset;
- Put any Mapping Preset you like into any Level of any Sound Button;
- Make up to 45 new Mapping Presets.

The significance of doing any or all of those things results in the possibility of having the same sound mapped in more than one Mapping Preset and in more than one compartment within a Mapping Preset, should you want to. For the present don't concern yourself with the third bullet point above: that will be for the next article.

At this point it's necessary to attempt to change one of the five User Mapping Presets, during which process all the above will, I hope, become a little clearer. Now, it's a bit concerning if you try to change something experimentally when you're not entirely confident in what you're doing. You don't want to lose what you already have. So instead of actually changing anything which currently exists, we're going to <u>add</u> sounds to compartments in Level 4 of Vibes. It's not possible to have all the currently mapped sounds on the display at the same time. There are also sounds of the same name in the database, distinguishable only by their different MIDI-PRG Numbers or the presence/absence of an asterisk. Therefore it's helpful to adopt a pencil and paper approach and to write down what you need to know, because the Mapping table on any screen does not show the MIDI-PRG Numbers.

So, what do you need to know? In our example, you need to compare all the Vibes type sounds in the database with all the Vibes type sounds currently mapped. The above table shows those sounds mapped into User 1 but without their MIDI-PRG Number. Here, therefore, is the full list, with MIDI-PRG Numbers, for User 1 to User 3 Mapping Presets mapped to the Vibes Sound Button:

| USER 1	USER 2	USER 3	USER 4	USER 5
Vibraphone 1 * 090-000-001	Warm Vibraphone 081-000-049	Chimey Tubular Bells 081-000-060		
Vibraphone 2 * 090-000-065	Rich Stereo Vibes 081-000-050	Melody Bells 081-000-061		
Musicbox * 090-000-114	Marimba 081-000-051	Hold Bell Layer 081-000-062		
Marimba * 090-000-115	Bass Marimba 081-000-052	Wheel Adjust Bell 081-000-063		
Celesta * 090-000-010	Xylophone 081-000-053	Tinker Bells 081-000-064		
Glockenspiel * 090-000-009	Octave Xylophone 081-000-054	Pretty Bells 081-000-065		
GG-Marimba * 091-000-022	All Bellz 081-000-057	Chime Bells 081-000-066		
Xylophon * 090-000-056	Simple Tubular Bells 081-000-058	Soft Chimey Bells 081-000-067		
Tubular Bells * 090-000-116	Hard Tubular Bells 081-000-059	Viborbellz Cascade 081-000-068		

I wouldn't want you to think that Mapping is a quick process: it certainly is not. Within the Vibes Button, User 1 is placed in Level 1, etc. Notice that Level 1 and User 1 are not necessarily related: they may be in a particular case but are not necessarily so.

The next step is to bring back the Sound Manager screen if that's not currently displayed. To do so, just hold down the Vibes button for a few seconds until the display changes. You may also notice that, despite starting from the Main screen where Level 1 Sounds are displayed, the Sound Manager screen has moved on to highlight Level 2. This is because subsequent presses of a Sound Button cause a move between Levels and that function is still operating. Simply touch the Level 1 tab or the Preset tab above Level 1 (in this case the User 1 Preset) to bring up Level 1. In the "Sound Groups" panel, touch the down arrow and select "Percussion" to limit the display of sounds in the "Sounds" panel. If the MIDI-PRG Number is not displayed, touch the A, B, C … >> button. That changes to MIDI-PRG >> so touch it again and the Sounds list is now in MIDI-PRG order. The job is to find any sounds which may fit a Vibes Button which are not already mapped. As Level 3 is full, the first place where you could put any such sound is in Level 4, but you could jump straight to Level 5 if you wished. We shall not. So touch the Level 4 tab and the display shows nine blank sound compartments.

You'll notice that this Percussion selection doesn't contain even all the Vibes Sounds already mapped. Maybe yours is different from mine but there are several GM Sounds listed. Generally, GM Sounds are not mapped by Wersi because they are considered to be more usable in Midi and Style situations, rather than for playing directly. Also, most of the GM Sounds are the same as the eponymous sound elsewhere in the database. In this instance, we're going to add **GM Tinkle Bell** to the first compartment in Level 4, just for the experience.

Method 1 for adding a sound to a blank Mapping position
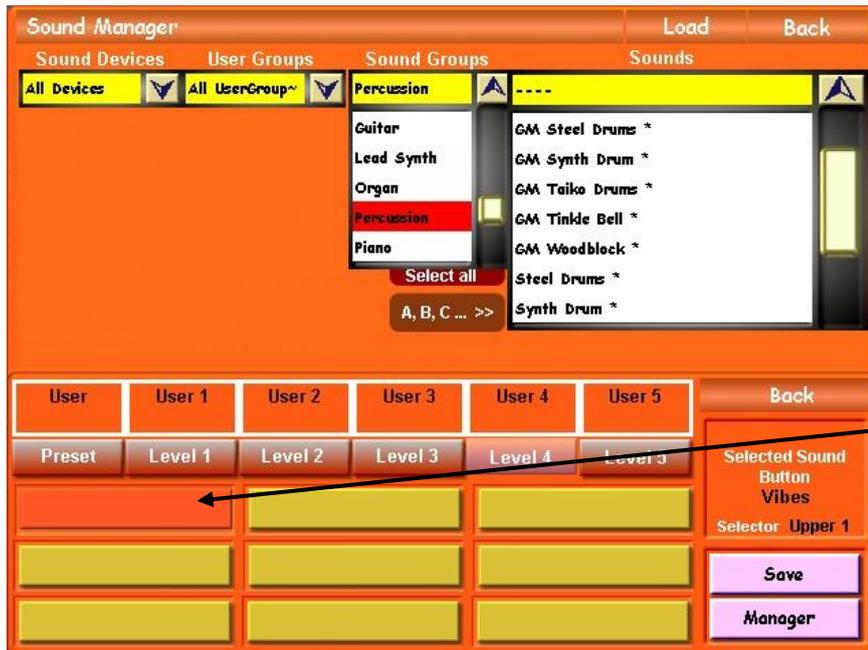
The first thing to do is to touch the first of the nine compartments in the Mapping area.

It goes red. This indicates it is ready for a Sound to be inserted into it.

The second thing to do is to touch the **GM Tinkle Bell *** Sound name in the Sounds list at the top of the screen. Immediately, that name is highlighted and the name also appears in the red compartment in the Mapping area which loses its red colour.
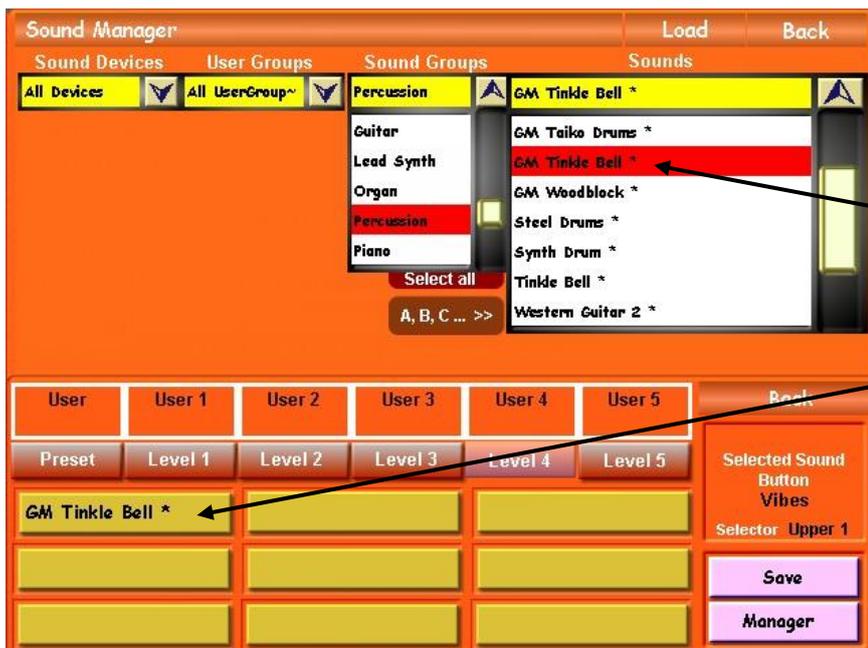
The GM Tinkle Bell * Sound is highlighted in red and the name appears in the first compartment in the Mapping area, removing the red colour from that compartment.

Method 2 for adding a sound to a blank Mapping position

There is an alternative way of placing the required sound in the required map position. It is essentially the opposite sequence to the one above.

Firstly touch the sound name **GM Tinkle Bell *** in the Sounds list.

The GM Tinkle Bell *
Sound is now
highlighted in red in
the Sounds list.

Secondly touch the compartment where you wish this sound to be mapped. In this instance, that is the first compartment.

The GM Tinkle Bell *
Sound now appears in
the touched
compartment which
also turns red.
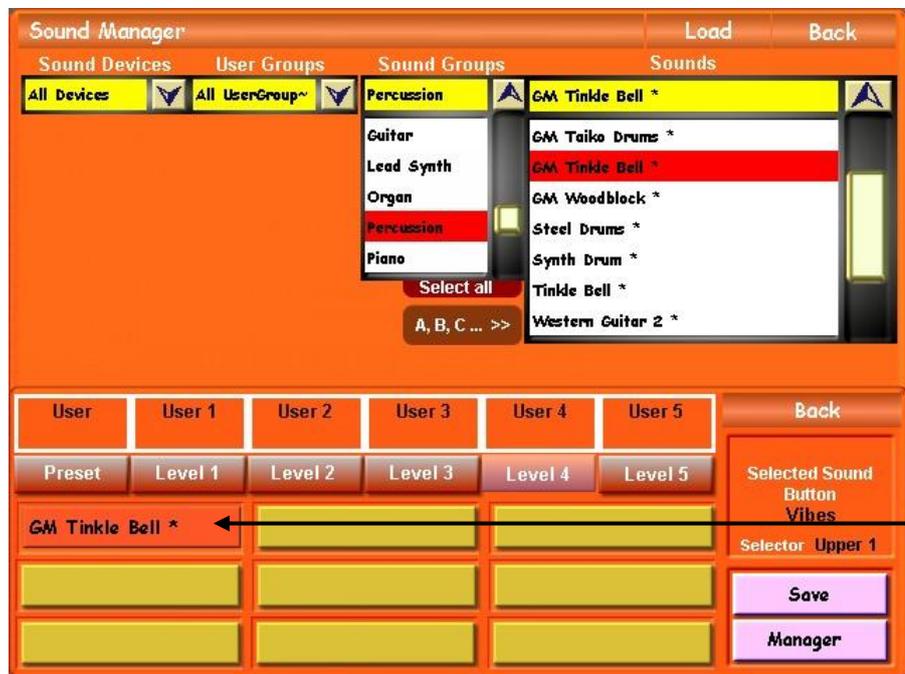
**Warning about
potential error
from using
Method 2**

Now, a word of warning won't come amiss here. While any of the mapping compartments has a red colour it is open to attack. That's a bit of a colourful expression but it helps emphasise a possible source of error. If, at the above stage, you were to touch another sound in the Sounds list, that sound would appear in the red compartment, replacing the one you actually want there. It's all very well if you've done that and spotted it at the same time: it's easy to correct. But if you don't spot it, later on you will be confused as to why there appears to be the wrong sound in that compartment.

To avoid that, always remember to touch the red compartment again before proceeding. It will lose its red colour and so close up, no longer open to attack.

This problem doesn't arise if you use the first procedure for mapping the Sound.

Now we have to imagine you've filled up all nine compartments of the Mapping Area (Level 4 above) and want to move on to fill up Level 5. If you then touch the Level 5 tab, this is what you'll see.

Saving after changing any Mapping

You'll see that I've filled up all nine compartments of level 4 with appropriate sounds obtained from the Sounds panel by selecting "All Groups" from the Sound Groups list.

This blue advisory screen appears saying you've made changes and asking if you want to save the changes.

This needs a bit of analysis and further explanation, so please read on below this screenshot.

We've filled up all the compartments of Level 4 which means we've added sounds to the list in the Mapping Preset User 4. We've then tried to move on to Level 5 which means that we've tried to shut down User 4 Mapping Preset (ie User 4 File, in computer terms) and tried to open up User 5 Mapping Preset (ie User 5 File, in computer terms) without saving our changes first. Now, as you know when using a computer, if you try to shut down a file without saving it first the computer will warn you and ask if you want to save the file you're trying to shut down. This is exactly what's happening here.

You may wonder why the blue box refers to "keyboard assignment 8". I imagine that, assuming Factory 1 to Factory 5 Mapping Presets occupy saving slots 0 to 4 on the computer in the organ, User 1 to User 5 Mapping Presets occupy saving slots 5 to 9. That would put User 4 Mapping Preset in saving slot 8. Presumably these saving slots are called "keyboard assignments".

Touching "Yes" on the blue panel produces the Map Manager screen for, amongst other things, saving a Mapping:

Overwrite mapping
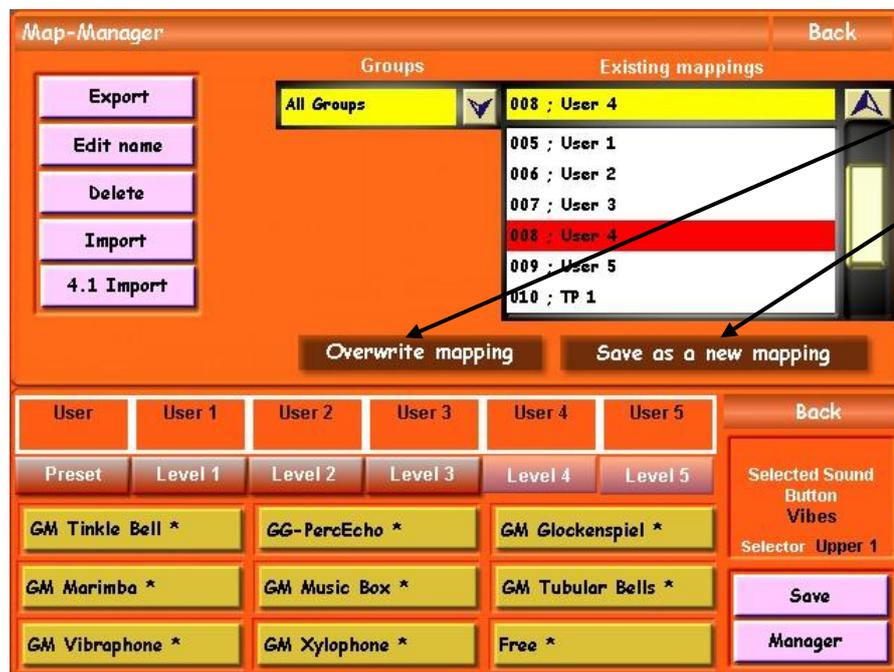
You'll notice two alternatives here: **Overwrite mapping** or **Save as a new mapping.**

Imagine "Overwrite mapping" is the equivalent of "Save" on a computer, and "Save as a new mapping" is the equivalent of "Save As…" on a computer.

As we are modifying an existing Mapping Preset, we just want to save that Mapping, not create a new one with a new name. Therefore, "Overwrite mapping" is the one to touch.

You may now be wondering why compartment 9 has changed from "Marimba Repeat" in the previous screenshot to "Free" in this one. This is just an artefact of producing the screenshots and is of no significance to the process: just my way of achieving the screenshots. It's worth mentioning that "Free" is one of the sounds in the Sounds list and is the only way I've found so far of deleting a sound from the Mapping. The word "Free" still occupies the compartment, though.

After touching "Overwrite mapping", the display changes to show the following warning in the centre of the screen:

Refreshing the Main screen to reflect Mapping changes

Again mapping 008 is referred to, with the addition of its name "User 4". Touching "Yes" returns the display to the Main screen which may not show your recent changes and still have only Levels 1 to 3 showing. In which case, you need to update the Upper Manual 1 slot by touching it, whereupon the newly filled Level 4 tab will now show.

When the Map Manager screen is showing, you can save at any time simply by touching the **Save** button which is above the **Manager** button bottom right of the screen. We shall be using the Manager button in the next article.

Also on the Map Manager screen are five buttons top left, all fairly self-explanatory. They all refer to the Mapping Presets, so you can import someone else's, export yours to someone else, change the name, delete one, etc.

That's all there is to it, really. If you now have a look into all your Sound and Style Buttons, you'll see where there are empty Mapping slots. You can now fill those with currently unmapped sounds/styles from the databases. You'll need to write out a lot of lists of which sounds/styles are not yet mapped in order to keep track of it all, especially different sounds having the same name. You can be sure that any Optional Sound Package sounds are not mapped as well as any sounds which Wersi has given with OAS-7.1 Revisions. If you have added additional styles using the OAA, they won't be mapped. Nor will the latest Wersi Styles using the OAA.

I know you really want to know what the "Manager" button is all about as well as "Save as a new mapping", but that will have to wait until the next and final article when the great benefits of those two features will be explored.

Happy mapping.

Colin
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